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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/715,794	11/16/2000	Andrew Arthur Hunter	10990361-2	9489

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EXAMINER

YODER III, CHRISS S

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 04/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/715,794

Applicant(s)

HUNTER ET AL.

Examiner

Chriss S. Yoder, III

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 November 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-4, 6, 8, 10, 12-16, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Takachi (US Patent Application # 2003/0137595).
2. In regard to claim 1, note Takachi discloses an image sensor (paragraph 28, lines 3-4; and figure 1: 4), a package structure for holding said image sensor (paragraph 28, lines 3-4; and figure 1: 4), said package structure including attachment means for attaching an optics system to said package structure (paragraph 29, lines 1-5; and figure 1: 15), and electrical connectors for creating electrical connections between said image sensor and a circuit board (although Takachi does not explicitly disclose the use of electrical connectors, they are inherent in order for the sensor to transmit data; see figure 4, and paragraph 39).
3. In regard to claim 2, note Takachi discloses that the attachment means includes an irregular surface on said package structure for mechanically attaching said optics system to said package structure (figure 1: 15, and paragraph 29). In Takachi, (15) does exhibit an "irregular" surface as claimed.

4. In regard to claim 3, note Takachi discloses that said attachment means includes a recess on said package structure for mechanically attaching said optics system to said package structure (figure 1: 15, and paragraph 29).

5. In regard to claim 4, note Takachi discloses that said attachment means includes a clip receiver integrated with said package structure for mechanically attaching said optics system to said package structure (figure 1: 15, and paragraph 29).

6. In regard to claim 6, note Takachi discloses that said package structure includes a contact surface that is complementary to a contact surface of said optics system (figure 1: 15 and 16, and paragraph 29). In Takachi, elements (15) and (16) provide complementary contact surfaces to one another.

7. In regard to claim 8, note Takachi discloses a transparent cover connected to said package structure that encloses said image sensor within a cavity of the package structure (paragraph 30, line 5; and figure 1: 5).

8. In regard to claim 10, note Takachi discloses that said attachment means causes said optics system to be aligned with said package structure and said image sensor when said optics system is attached to said package structure (paragraph 36, lines 6-14).

9. In regard to claim 12, note Takachi discloses the use of an image sensor package (paragraph 28, lines 15-16; and figure 1: 3); and an optics system connected to said image sensor package (paragraph 28, lines 10-11; and figure 1: 10 and 13); said image sensor package comprising; an image sensor (paragraph 28, lines 22; and figure 1: 4); a package structure for holding said image sensor (paragraph 28, lines 15-16; and

figure 1: 3), said package structure including attachment means for attaching said optics system to said image sensor package (paragraph 36, lines 6-10; and figure 1: 15); said optics system comprising; a lens (paragraph 28, lines 10-11; and figure 1: 10 and 13); a lens holder structure for holding said lens (paragraph 29, lines 1-2; and figure 1: 8a and 8b), said lens holder structure including attachment means for attaching said optics system to said image sensor package (paragraph 36, lines 6-10; and figure 1: 16), and electrical connectors for creating electrical connections between said image sensor and a circuit board (although Takachi does not explicitly disclose the use of electrical connectors, they are inherent in order for the sensor to transmit data; see figure 4, and paragraph 39).

10. In regard to claim 13, note Takachi discloses that said attachment means of said package structure and said attachment means of said lens holder structure include complementary surfaces for mechanically attaching said optics system to said image sensor package (figure 1: 15 and 16, and paragraph 29). In Takachi, elements (15) and (16) provide complementary contact surfaces to one another.

11. In regard to claim 14, note Takachi discloses that said image sensor package includes a transparent cover connected to said package structure that encloses said image sensor within a cavity of said package structure (paragraph 30, line 5; and figure 1: 5).

12. In regard to claim 15, note Takachi discloses that said attachment means of said package structure and said lens holder structure cause said lens to be aligned with said image sensor (paragraph 36, lines 6-14).

13. In regard to claim 16, note Takachi discloses that said attachment means of said package structure includes clip receivers (figure 1: 15) and wherein said attachment means of said lens holder structure includes clip arms (figure 1: 16), said clip arms and said clip receivers being mutually attachable to create a connection between said package structure and said lens holder structure (paragraph 36, lines 6-14; and figure 1: 15 and 16).

14. In regard to claim 18, note Takachi discloses that said package structure and said lens holder structure include complementary contact surfaces (figure 1: 15 and 16, and paragraph 29). In Takachi, elements (15) and (16) provide complementary contact surfaces to one another.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 7 and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takachi (US Patent Application # 2003/0137595).

16. In regard to claim 7, note Takachi discloses an image sensor, a package structure for holding said image sensor, said package structure including attachment means for attaching an optics system to said package structure, electrical connectors for creating electrical connections between said image sensor and a circuit board, and that said package structure includes a contact surface that is complementary to a

contact surface of said optics system as recited in claims 1 and 6. Therefore, it can be seen that Takachi fails to disclose that the contact surface of said package structure is formed to create a light-tight connection with said contact surface of said optics system. Although, Takachi does not explicitly disclose that the contact surface of said package structure is formed to create a light-tight connection with said contact surface of said optics system, it is implied, and necessarily required, from figure 1: 15 and 16 (if these were not light-tight, the image would not be captured correctly, this has to be light-tight in order to only receive light through the optics for a proper image). Therefore, it would have been obvious to one of ordinary skill in the art to recognize that the Takachi device must include the use of contact surface of the package structure is formed to create a light-tight connection with said contact surface of said optics system in order to in order to only receive light through the optics for a proper image as claimed.

17. In regard to claim 19, note Takachi discloses a circuit board (paragraph 5, lines 1-3); an image sensor package connected to said circuit board (figure 3: 1 and 3; this is a separate embodiment, but it is implied that the package in figure 1 is mounted in the same manner); and an optics system connected to said image sensor package (paragraph 28, lines 10-11; and figure 1: 10 and 13); said circuit board having electrical contact points (Takachi disclose the use of a circuit board in figure 3, and electrical connectors although not explicitly disclosed, they are inherent and necessary in order for the sensor to transmit data; see figure 4, and paragraph 39) ; said image sensor package comprising; an image sensor (paragraph 28, lines 22; and figure 1: 4); a package structure for holding said image sensor (paragraph 28, lines 15-16; and figure

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1: 3), said package structure including attachment means for attaching said optics system to said image sensor package (paragraph 36, lines 6-10; and figure 1: 15); electrical connectors that are attached to said electrical contact points of said circuit board (Takachi disclose the use of a circuit board in figure 3, and electrical connectors although not explicitly disclosed, they are inherent and necessary in order for the sensor to transmit data; see figure 4, and paragraph 39), said electrical connectors creating electrical connections between said image sensor and said contact points of said circuit board (Takachi disclose the use of a circuit board in figure 3, and electrical connectors although not explicitly disclosed, they are inherent and necessary in order for the sensor to transmit data; see figure 4, and paragraph 39); said optics system comprising; a lens (paragraph 28, lines 10-11; and figure 1: 10 and 13); a lens holder structure for holding said lens (paragraph 29, lines 1-2; and figure 1: 8a and 8b), said lens holder structure including attachment means for attaching said optics system to said image sensor package (paragraph 36, lines 6-10; and figure 1: 16).

18. In regard to claim 20, note Takachi discloses that said attachment means of said package structure and said attachment means of said lens holder structure include complementary surfaces for mechanically attaching said optics system to said image sensor package (figure 1: 15 and 16).

19. In regard to claim 21, note Takachi discloses that said image sensor package includes a transparent cover connected to said package structure that encloses said image sensor within a cavity of said package structure (paragraph 30, line 5; and figure 1: 5).

20. In regard to claim 22, note Takachi discloses that said attachment means of said package structure includes clip receivers (figure 1: 15) and wherein said attachment means of said lens holder structure includes clip arms (figure 1: 16), said clip arms and said clip receivers being mutually attachable to create a connection between said package structure and said lens holder structure (paragraph 36, lines 6-14; and figure 1: 15 and 16).

21. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takachi (US Patent Application # 2003/0137595) in view of Crespiatico et al. (US Patent # 5,007,854).

22. In regard to claim 9, note Takachi discloses an image sensor, a package structure for holding said image sensor, said package structure including attachment means for attaching an optics system to said package structure, electrical connectors for creating electrical connections between said image sensor and a circuit board, that said package structure includes a contact surface that is complementary to a contact surface of said optics system, and a transparent cover connected to said package structure that encloses said image sensor within a cavity of the package structure as recited in claims 1 and 8. Therefore, it can be seen that Takachi fails to disclose a removable protective barrier, connected to said attachment means, that protects said transparent cover from damage. Crespiatico discloses the use of a removable protective barrier, connected to said attachment means, that protects the device it is attached to from damage (figure 1 and figure 2: item 3). Crespiatico teaches that the use of a protective barrier is preferred in order to protect the device while being easily

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removable. Therefore, it would have been obvious to one of ordinary skill in the art to have been motivated to modify the Takachi device to include a removable protective barrier, connected to said attachment means, that protects the device it is attached to from damage in order to protect the device while being easily removable as suggested by Crespiatico (column 1, lines 40-44).

23. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takachi (US Patent Application # 2003/0137595) in view of Wataya et al. (US Patent # 6,693,674).

24. In regard to claim 11, note Takachi discloses an image sensor, a package structure for holding said image sensor, said package structure including attachment means for attaching an optics system to said package structure, and electrical connectors for creating electrical connections between said image sensor and a circuit board. Therefore, it can be seen that Takachi fails to disclose an alignment feature integrated into said package structure for aligning said optics system with said image sensor. Wataya discloses the use of an alignment feature integrated into said package structure for aligning said optics system with said image sensor (column 1, lines 28-38; and figure 1A; 26 and 27). Wataya teaches that the use of an alignment feature integrated into said package structure for aligning said optics system with said image sensor is preferred in order to reduce errors in the rotational direction. Therefore, it would have been obvious to one of ordinary skill in the art to have been motivated to modify the Takachi device to include the use of an alignment feature integrated into said package structure for aligning said optics system with said image sensor in order to

reduce errors in the rotational direction as suggested by Wataya (column 1, lines 28-55).

25. Claim 5, 17, and 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takachi (US Patent Application # 2003/0137595) in view of Takada (US Patent # 6,359,652).

26. In regard to claim 5, note Takachi discloses substantially as recited in claim 1, an image sensor, a package structure for holding said image sensor, said package structure including attachment means for attaching an optics system to said package structure, electrical connectors for creating electrical connections between said image sensor and a circuit board, and that said package structure includes a contact surface that is complementary to a contact surface of said optics system. Takachi discloses that the lens holder and the sensor package are mated together with clip arms and clip receivers, wherein the arms are on the lens system. Therefore, it can be seen that Takachi fails to disclose that said attachment means includes a clip arm integrated with said package structure, instead of the lens system, for mechanically attaching said optics system to said package structure. Takada discloses an alternate arrangement with the use of a clip arm and a receiver with the receiver in the lens holder and the clip arms connect to the lens holder to attach the image sensor (figure: 325 and 374). Since it was known in the art to connect an image sensor package to an optic system with either the arms or the receivers on the optics system, it would have been obvious to switch the arm/receiver location because by doing so, there is no change in functionality.

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27. In regard to claim 17, note Takachi discloses substantially as recited in claim 12, the use of an image sensor package; and an optics system connected to said image sensor package; said image sensor package comprising; an image sensor; a package structure for holding said image sensor, said package structure including attachment means for attaching said optics system to said image sensor package; said optics system comprising; a lens; a lens holder structure for holding said lens, said lens holder structure including attachment means for attaching said optics system to said image sensor package, and electrical connectors for creating electrical connections between said image sensor and a circuit board. Takachi discloses that the lens holder and the sensor package are mated together with clip arms and clip receivers, wherein the arms are on the lens system. Therefore, it can be seen that Takachi fails to disclose that said attachment means includes a clip arm integrated with said package structure, instead of the lens system, for mechanically attaching said optics system to said package structure. Takada discloses an alternate arrangement with the use of a clip arm and a receiver with the receiver in the lens holder and the clip arms connect to the lens holder to attach the image sensor (figure: 325 and 374). Since it was known in the art to connect an image sensor package to an optic system with either the arms or the receivers on the optics system, it would have been obvious to switch the arm/receiver location because by doing so, there is no change in functionality.

28. In regard to claim 23, note Takachi discloses substantially as recited in claim 19, a circuit board; an image sensor package connected to said circuit board; and an optics system connected to said image sensor package; said circuit board having electrical

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contact points; said image sensor package comprising; an image sensor; a package structure for holding said image sensor, said package structure including attachment means for attaching said optics system to said image sensor package; electrical connectors that are attached to said electrical contact points of said circuit board, said electrical connectors creating electrical connections between said image sensor and said contact points of said circuit board; said optics system comprising; a lens; a lens holder structure for holding said lens, said lens holder structure including attachment means for attaching said optics system to said image sensor package. Takachi discloses that the lens holder and the sensor package are mated together with clip arms and clip receivers, wherein the arms are on the lens system. Therefore, it can be seen that Takachi fails to disclose that said attachment means includes a clip arm integrated with said package structure, instead of the lens system, for mechanically attaching said optics system to said package structure. Takada discloses an alternate arrangement with the use of a clip arm and a receiver with the receiver in the lens holder and the clip arms connect to the lens holder to attach the image sensor (figure: 325 and 374). Since it was known in the art to connect an image sensor package to an optic system with either the arms or the receivers on the optics system, it would have been obvious to switch the arm/receiver location because by doing so, there is no change in functionality.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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US004594613: note the use of an imaging device package.

US006359652B1: note the use of clips to attach the optics to the sensor in figures 5 and 6.

US005302778A: note the use of clips to attach the optics to the sensor in figure 5.

US006518656B1: note the use of an imaging device package.

US005495114A: note the use of imaging device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chriss S. Yoder, III whose telephone number is (703) 305-0344. The examiner can normally be reached on M-F: 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber, can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-HELP.

CSY
April 19, 2004


VULE
PRIMARY EXAMINER